

CLAIMS

1 A hand-held powered saw with a reciprocating cutting blade comprising:

- 5 - a clamping arm which is rotatably mounted on the saw by means of a one way rotary clutch such that the arm can freely rotate in one direction only, and
- 10 - a support member which co-operates with the clamping arm to hold an object to be cut,
- 15 - wherein the centre of mass of the clamping arm is spaced apart from the axis of rotation of said rotary one way clutch so that the vibration of the saw as a whole generated by reciprocation of the cutting blade induces a progressive rotation of the clamping arm when the saw is in use.

2 A saw according to claim 1 additionally comprising a slide element which is slideably mounted on the saw for
20 sliding movement in a direction across the blade wherein the clamping arm is rotatably mounted on the slide element so that the sliding movement of the slide element and clamping arm guides an object held between the support member and the clamping arm across the cutting blade.

25 3 A saw according to claim 2 wherein the support member is mounted on the slide element.

30 4 A saw according to claim 1 wherein the support member comprises the cutting blade.

5 A saw according to any one of the preceding claims wherein the shape of curvature of the surface of the clamping arm which engages an object to be cut (hereafter referred to
35 as the holding surface) and the location of the axis of

rotation of the clamping arm are such that when an object of circular cross section is first cut by the reciprocating blade, the tangent to the surface of the object at the point on the surface where the clamping arm first makes contact with the pole is at an angle of between 30° and 60° to a plane which passes through the length of the blade which plane is 90° to the plane of the blade.

6 A saw according to claim 5 wherein the angle is 40° to 50°.

7 A saw according to any one of the preceding claims, wherein the clamping arm is mounted on the saw via a reversing slip clutch which allows the clamping arm to rotate in the reverse direction to the direction of free rotation of the rotary one way clutch if a reverse torque is exerted on the clamping arm which exceeds a specified threshold.

8 A saw according to claim 7 wherein the one way rotary clutch and the reversing slip clutch are co-axially mounted.

9 A saw according to any one of claims the preceding claims wherein the axis of rotation of the rotary one way clutch is oriented substantially perpendicular to the plane of the blade.

10 A saw according to any one of the preceding claims wherein the clamping arm is made from a plastics material having a metal weight located towards an end of the clamping arm, distant from the one way rotary clutch.

11 A saw according to any one of the preceding claims wherein in the plane of the clamping arm the direction of curvature of the end of the clamping arm distant from the one

way rotary clutch is opposite to that of the holding surface of the clamping arm.

12 A saw substantially as hereinbefore described with
5 reference to any one of Figures 1 to 22.

13 A clamping mechanism which is mountable on a powered hand-held reciprocating saw which saw has a reciprocating cutting blade, said clamping mechanism comprising:

- 10 - a clamping arm which is rotatably mounted on the clamping mechanism by means of a one way rotary clutch such that the arm can freely rotate in one direction only,
- 15 - wherein the centre of mass of the clamping arm is spaced apart from the axis of rotation of said rotary one way clutch.

14 A clamping mechanism according to claim 13 wherein the clamping mechanism further comprises a support member which
20 co-operates with the clamping arm to hold an object to be cut.

15 A clamping mechanism according to claim 14 additionally comprising a slide element which is slideably mountable on the saw for sliding movement in a direction across a reciprocating
25 cutting blade of a saw wherein the clamping arm is rotatably mounted on the slide element so that the sliding movement of the slide element and clamping arm guides an object held between the support member and the clamping arm across a reciprocating cutting blade.

30 16 A clamping mechanism according to claim 15 wherein the support member is mounted on the slide element.

17 A clamping mechanism according to any one of claims 13 to
35 16, wherein the clamping arm is mountable on a saw via a

reversing slip clutch which allows the clamping arm to rotate in the reverse direction to the direction of free rotation of the rotary one way clutch if a reverse torque is exerted on the clamping arm which exceeds a specified threshold.

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18 A clamping mechanism according to claim 17 wherein the one way rotary clutch and the reverse slip clutch are coaxially mounted.

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19 A clamping mechanism according any one of claims 13 to 18 wherein the clamping arm is made from a plastics material having a metal weight towards an end of the clamping arm distant from the one way rotary clutch.

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20 A clamping mechanism according to any one of claims 13 to 19 wherein in the plane of the clamping arm the direction of curvature of an end of the clamping arm distant from the one way rotary clutch is opposite to that of the holding surface of the clamping arm.

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21 A clamping mechanism substantially as hereinbefore described with reference to any one of Figures 1 to 22.